

**STUDIES IN AQUATIC INSECTS XII: DESCRIPTIONS OF NINETEEN NEW SPECIES OF THE GENUS *OCHROTRICHIA* MOSELY (TRICHOPTERA: HYDROPTILIDAE) FROM MEXICO AND CENTRAL AMERICA**

JOAQUÍN BUENO-SORIA AND SILVIA SANTIAGO-FRAGOSO

Departamento de Zoología, Instituto de Biología UNAM, Apartado. Postal No. 70-153, México, 04510 D.F., México.

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*Abstract.*—Nineteen new species of the genus *Ochrotrichia* Mosely from Mexico and Central America are described and the male genitalia figured: **O. ixcateopana** (Mexico); **O. crucecita** (Panama); **O. arriba** (Panama); **O. zihuaquia** (Mexico); **O. blanca** (Belize); **O. maycoba** (Mexico); **O. eyipantla** (Mexico); **O. glabra** (Panama); **O. hondurenia** (Belize); **O. corneolus** (Panama); **O. anomala** (Panama); **O. bicaudata** (Panama); **O. regina** (Panama); **O. lupita** (Panama); **O. maya** (Mexico); **O. palmata** (Mexico); **O. serrana** (Mexico); **O. poblana** (Mexico); and **O. velascoi** (Mexico). This genus has a wide distribution, from southern Canada south throughout Mexico and Central America, the West Indies, and South America.

*Key Words:* taxonomy, *Ochrotrichia*, Trichoptera, Hydroptilidae, Mexico, Central America

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The genus *Ochrotrichia* Mosely of the Neotropical Region has been studied by Mosely (1937), Denning and Blickle (1972), Bueno and Santiago (1981, 1992) and Flint (1972). However, in Mexico, Central, and South America there are still many undescribed species.

This genus was previously divided into the subgenera *Ochrotrichia* and *Metrichia* by Flint (1972) because of his belief that the larvae of both genera were indistinguishable, but the adults were quite distinct. However, Wiggins (1996) found a number of characters which separate larvae of *Ochrotrichia* from *Metrichia* and considered them as distinct genera; we follow this concept. The adult of *Ochrotrichia* lacks an apical spur on the foreleg, and the male lacks modifications on the abdomen and possesses genitalia with a large, often extremely modified tenth tergum and a rather simple phallus. *Metrichia* has an apical spur

on the foreleg, the abdomen often possesses internal sacs and/or setal brushes, and the male genitalia has the tenth tergum reduced to a simple membranous lobe, a button-like cercus, dorsolateral hooks, and a very large phallus, usually with two large hooks.

Most of the species of *Ochrotrichia* here described, were provided by Dr. Oliver S. Flint, Jr. from the collection of the National Museum of Natural History (NMNH) where they will be deposited. The rest of the species, will be deposited in the collection of the Instituto de Biología UNAM (IBUNAM).

#### Family Hydroptilidae

In Mexico, Central, and South America there are representatives of all six tribes: Leucotrichiini, Stactobiini, Neotrichiini, Ochrotrichiini, Orthotrichiini and Hydroptiliini all in the subfamily Hydroptilinae (Marshall 1979). The genus *Ochrotrichia*,

belonging to the tribe Ochrotrichiini, is well represented in the tropical rain forests of Mexico, Central, and South America (Bueno and Santiago 1992).

Flint (1972), divided the genus *Ochrotrichia* Mosely into two major groups, one, the *xena* group, which is characterized by a simple ninth segment and the tenth tergum being a simple flap often with a few small spines. The other major group is characterized by the ninth tergum depressed below the dorsal margin of the pleura and the anterior margin is produced beyond the anterior margin of the pleura. The tenth tergum is more or less fused with the ninth tergum and appears greatly modified, bearing many spines, processes and plates. This second major group was divided by Flint (1972) into six subgroups, on the basis of the shape of the tenth tergum, inferior appendages and phallus.

#### Genus *Ochrotrichia* Mosely

*Polytrichia* Sibley 1926:102.—Betten 1934:153.—Mosely 1937:184.—Ross 1944:125. Type species: *Ithytrichia confusa* Morton 1905, monobasic [preoccupied].

*Ochrotrichia* Mosely 1934:162.—Ross 1944:125.—Denning 1956:255.—Flint 1964:58; 1968a:48; 1968b:59. Type species *Ochrotrichia insularis* Mosely, 1934, by original designation.

#### *Ochrotrichia ixcateopana* Bueno and Santiago, new species (Figs. 1–3)

On the basis of the shape of the inferior appendages in lateral view and because of the presence and distribution of the processes of the tenth tergum, *O. ixcateopana* belongs to the group of species related to *O. dactylophora* Flint, from which it differs in the long process of the inferior appendages and features of the tenth tergum.

Adult.—Length of forewing 2.5 mm. Color in alcohol dark brown. Male genitalia: ninth tergum depressed and produced anteriorly. Tenth tergum with two spines on

right side, lateralmost shorter, and other long and curved ventrally; centrally with basal middorsal process having two upturned spines at apex. Inferior appendages asymmetrical, both with heavy, black, posterior spines; left inferior appendage with row of three short spines in midsection of posterior border; right inferior appendage with two, black, short, robust spines. Phallus long and threadlike.

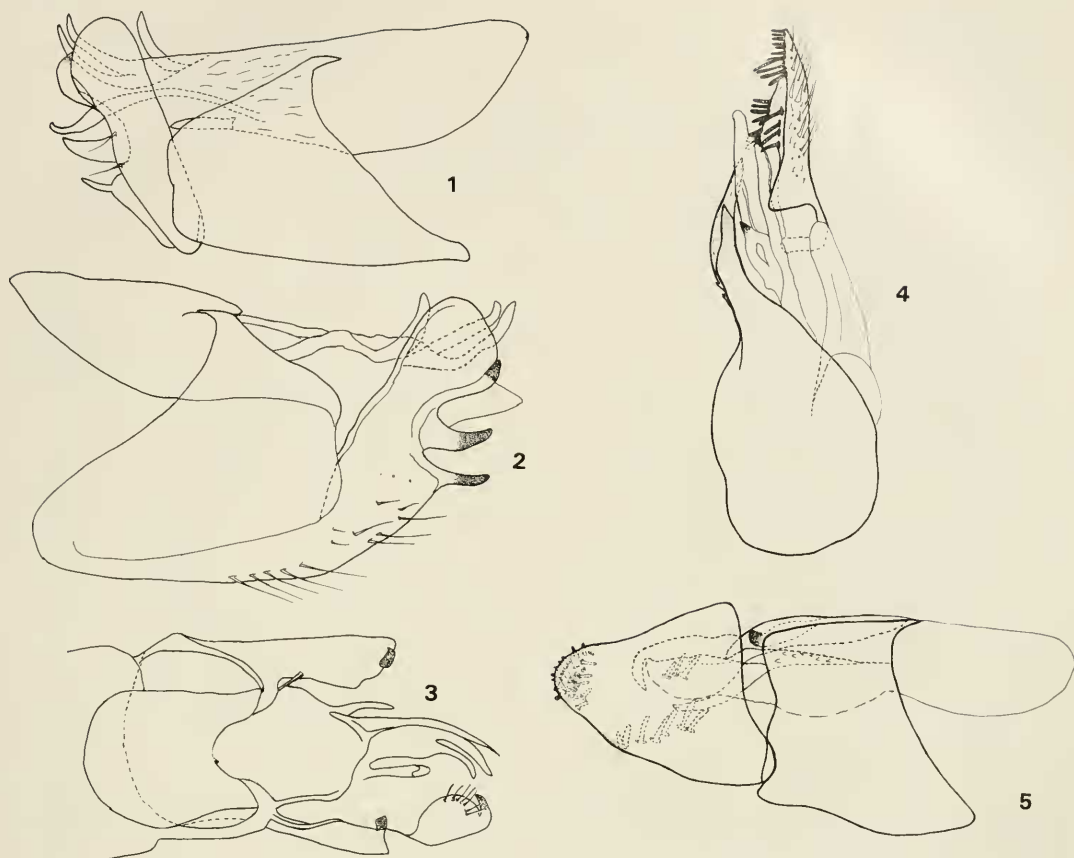
Material.—Holotype, ♂: MEXICO: Guerrero, 7 km Route Taxco-Ixcateopan, 17 June 1987, J. Bueno, H. Brailovsky and E. Barrera (IBUNAM).

Etymology.—Named for Ixcateopan, Guerrero, the area where the type was collected.

#### *Ochrotrichia crucecita* Bueno and Santiago, new species (Figs. 4–5)

This species appears to be closely related to *Ochrotrichia cruces* Flint. However, it is distinguished from that species by the presence of two spines on the right side of the tenth tergum in lateral view: one being short, stout, basodorsal, curved ventrally and the other long and curved ventrally, and by the lack of the third small, thin, spine on the right side, which is present in *O. cruces*.

Adult.—Length of forewing 3 mm. Color in alcohol dark brown. Male genitalia: ninth segment with short, broad posterodorsal lobe, in lateral aspect deeply depressed and produced anteriorly. Tenth tergum complex in dorsal view, with an elongate, black-tipped process arising basolaterally on right side curving to left side; a short, black-tipped, middorsal, upcurved spine and a robust spine situated dorsolaterally; apical process with tip hooked ventrad; in lateral aspect elongate, black-tipped process appears curved and ventrally situated to rest of structures; in this view, a short, black-tipped, middorsal, spine appears situated behind a robust, dorsolaterally situated spine. Inferior appendages broadly triangular, apex rounded, with a band of black,



Figs. 1-5. 1-3, *Ochrotrichia ixcateopana*, male genitalia. 1, Right side. 2, Left side. 3, Dorsal. 4-5, *O. crucecita*, male genitalia. 4, Dorsal. 5, Lateral.

peglike setae apically and on midbasal ridge, one more cluster near dorsal margin. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA: Chiriqui, Guadalupe Arriba 8°52'26"N: 82°33'13"W, 2-8 May 1984, H. Wolda (NMNH). Paratypes: same as holotype but 3-9 July 1985, 1 ♂ (NMNH); same as holotype but 24-30 July 1985, 1 ♂ (NMNH).

Etymology.—*crucecita*: diminutive in Spanish for little cross.

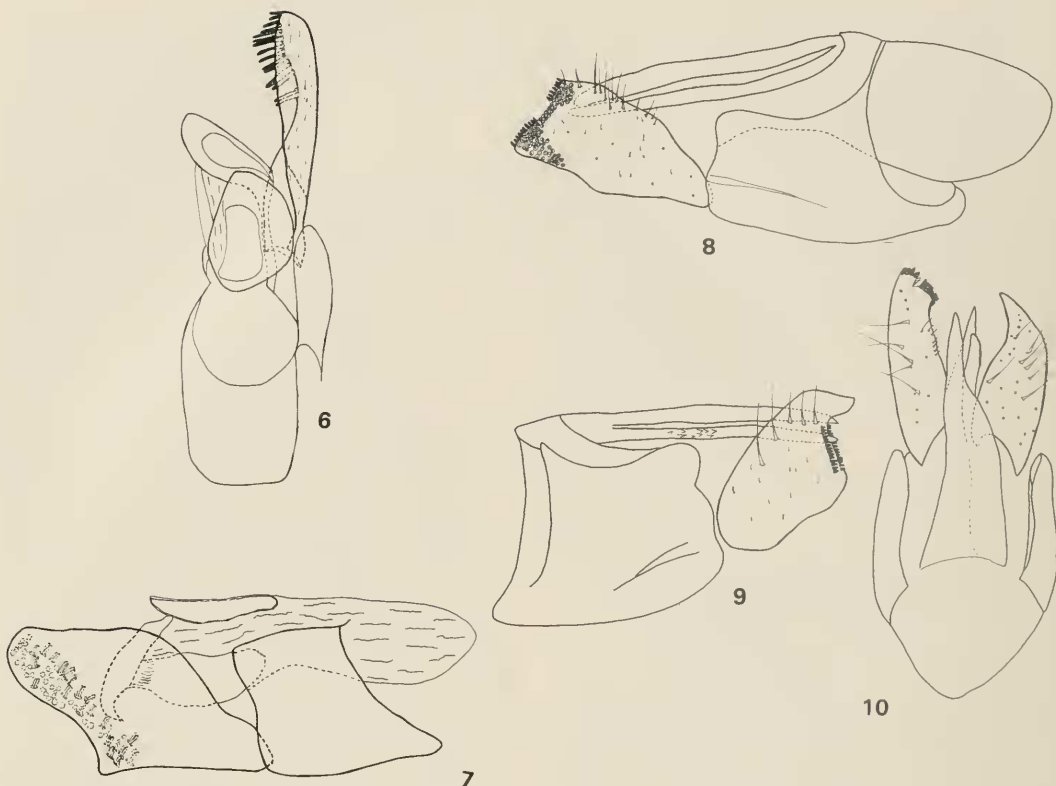
***Ochrotrichia arriba* Bueno and Santiago,  
new species  
(Figs. 6-7)**

On the basis of the shape of the inferior appendages in lateral aspect, this species could be considered related to *Ochrotrichia*

*aldama* (Mosely). However, the tenth tergum of *O. arriba* is formed by two short, rounded plates in dorsal view, a character distinctly different from *O. aldama*.

Adult.—Length of forewing 3 mm. Color in alcohol dark brown. Male genitalia: ninth tergum deeply depressed and produced anteriorly. Tenth tergum in dorsal aspect like a simple, broad, elongate flap with a rounded, ringlike area anteriorly and a curved and narrowed posterior plate; in lateral aspect apex of posterior plate appears curved ventrad. Inferior appendages in lateral view rectangular, broad and with small posteroventral lobe; posterior margin with a band of black, peglike setae. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA:



Figs. 6–10. 6–7, *Ochrotrichia arriba*, male genitalia. 6, Dorsal. 7, Lateral. 8–10, *O. zihuaquia*, male genitalia. 8, Right side. 9, Left side. 10, Dorsal.

Chiriqui, Guadalupe Arriba, 8°52'26"N 82°33'13"W, 3–9 July 1985, H. Wolda (NMNH).

Etymology.—*arriba*: Spanish for above.

***Ochrotrichia zihuaquia* Bueno and Santiago, new species**  
(Figs. 8–10)

On the basis of the shape of the inferior appendages, this species appears to be related to *Ochrotrichia insularis* Mosely, but the distinct processes on the tenth tergum, resemble those of *Ochrotrichia aldama* (Mosely).

Adult.—Length of forewing 2.9 mm. Color in alcohol dark brown. Forewing with a transverse, white band at midlength. Male genitalia: ninth segment open dorsally, slightly produced anteriorly. Tenth tergum mostly membranous with three long processes almost of equal length; in lateral as-

pect apparently with two long processes with acute apices; process on left side with a group of small spines. Inferior appendages short and wide with cluster of thick, long, dark spines on mesal face at apex; in dorsal aspect, appendages asymmetric, left appendage with long, apicodorsal process, right appendage with posterior margin swollen and covered with peglike seta. Phallus long and threadlike.

Material.—Holotype, ♂: MEXICO: Guerrero, route 134, 102 km N. W. of Zihuatanejo, 1200 m, 7 June 1984, J. Bueno and E. Marino (IBUNAM). Paratypes: MEXICO: Oaxaca, Candelaria de Loxicha, Finca Pacifica, 510 M elevation, 2 June 1985, E. Barrera 1 ♂ (IBUNAM) and 1 ♂ (NMNH).

Etymology.—Named from the place where the type was collected in Zihuaquio, Guerrero.



***Ochrotrichia blanca* Bueno and  
Santiago, new species**  
(Figs. 11–13)

This species and the two subsequent species, on the basis of shape of the inferior appendages in lateral aspect and the presence of long processes on the right side of the tenth tergum, appear to be related. However, *Ochrotrichia blanca* differs from these species by the presence of a short middorsal spine and by the distribution of the five long processes on the tenth tergum.

Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth segment deeply depressed and produced anteriorly. Tenth tergum in dorsal view, with a long dorsalmost process on left side, with a short middorsal spine; on right side with two, long, curved processes, left one wider than right one which appears narrowed, both with apex acute and convergent; in lateral view ventral plate appears U-shaped on left side. Inferior appendages elongate, broadest apically; in lateral aspect slightly triangular; posterior border with many black, peglike setae. Phallus long and threadlike.

Material.—Holotype, ♂: BELIZE: Cayo District, Rio Privassion, Blancaneaux Lodge, 9–11 July 1973, Y. Sedman (NMNH).

Etymology.—*blanca*: feminine, white in Spanish.

***Ochrotrichia maycoba* Bueno and  
Santiago, new species**  
(Figs. 14–16)

This species appears related to *Ochrotrichia blanca* and *O. eyipantla*. Because of the distribution of the processes of the tenth tergum, and the shape of inferior appendages, *O. maycoba* also shows a relationship with the species of the *confusa* complex.

Adult.—Length of forewing 3 mm. Color in alcohol pale brown. Male genitalia: ninth tergum deeply depressed and slightly produced anteriorly. Tenth tergum with five elongate processes; two processes on left

side and three on right side, dorsalmost one appears widest and slightly curved to right; underneath these five processes a long process ending in a sclerotized, hook-like apex. Inferior appendages broadly triangular, with one broad, posterodorsal process in lateral aspect; right appendage with a posterior, apically situated, patch of black peglike setae; left appendage with apical row of black peglike setae and a fingerlike process on posterodorsal corner. Phallus long and threadlike.

Material.—Holotype, ♂: MEXICO: Sonora, Maycoba River, west of Maycoba, 21 August 1986, R. Baumann, Sergeant & Kondratieff (NMNH).

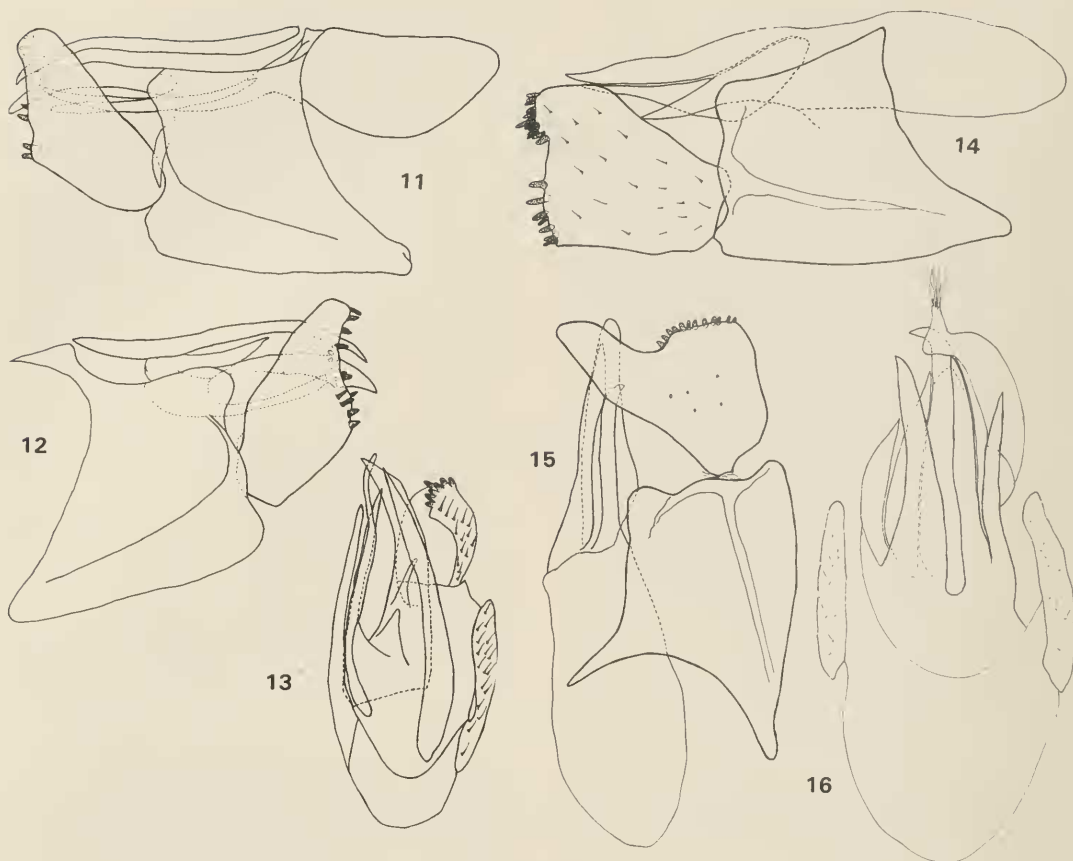
Etymology.—Named for the Maycoba River where the holotype was collected.

***Ochrotrichia eyipantla* Bueno and  
Santiago, new species**  
(Figs. 17–19)

On the basis of the shape and distribution of the processes of the tenth tergum, this species appears to be related to *Ochrotrichia maycoba*. However, *Ochrotrichia eyipantla* can be separated from this species by the presence of only four spinelike processes on the tenth tergum, and by the differences in shape and size of the inferior appendages.

Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth tergum slightly depressed and slightly produced anteriorly. Tenth tergum in dorsal aspect with a long, wide, and laterally-situated process, whose apex touches the apical hooklike portion of ventralmost process which is widened at midlength; with four shorter middorsal spinelike processes, lateralmost on right side shorter than lateralmost on left side, one of middorsal spinelike processes slightly curved; in lateral view on right side with a straight spinelike process. Inferior appendages broadly triangular, with apical row of black peglike setae. Phallus long and threadlike.

Material.—Holotype, ♂: MEXICO: Veracruz, Salto de Eyipantla, Eyipantla River,



Figs. 11–16. 11–13, *Ochrotrichia blanca*, male genitalia. 11, Right side. 12, Left side. 13, Dorsal. 14–16, *O. maycoba*, male genitalia. 14, Right side. 15, Left side. 16, Dorsal.

30 March 1990, P. J. Spangler and S. Santiago-Fragoso (IBUNAM).

Etymology.—Named from Eyipantla, a waterfall in Veracruz, where the holotype was collected.

***Ochrotrichia glabra* Bueno and Santiago, new species**  
(Figs. 20–21)

On the basis of the shape of the tenth tergum, *Ochrotrichia glabra* appears most similar to *Ochrotrichia hondurenia*. However, *O. glabra* can be separated from that species by the lack of stout peglike spines on the tenth tergum.

Adult.—Length of forewing 2 mm. Color in alcohol dark brown. Male genitalia: ninth segment deeply depressed and slightly pro-

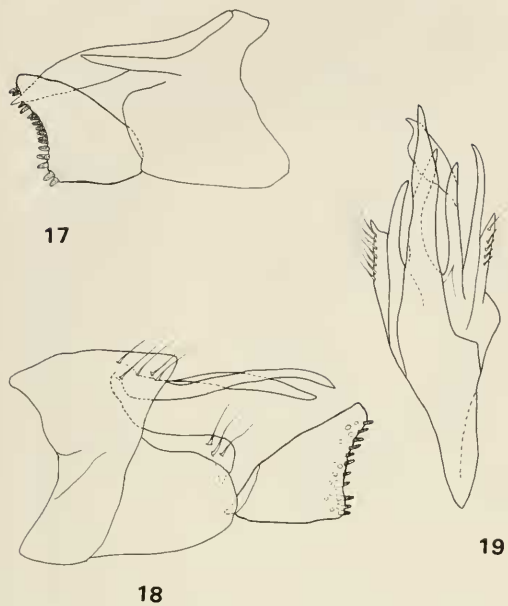
duced anteriad. Tenth tergum a simple, elongate, glabrous lobe, with apex rounded. Inferior appendages rectangular and elongate, apex broad and rounded; with cluster of black peglike setae at apex and another group near ventral margin; midbasal ridge obsolescent. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA, Chiriqui, Guadalupe Arriba, 8°52'26"N and 82°33'13"W, 30 October–5 November 1985, H. Wolda (NMNH).

Etymology.—*glabra*: Latin for hairless, smooth, relating to the tenth tergum.

***Ochrotrichia hondurenia* Bueno and Santiago, new species**  
(Figs. 22–23)

On the basis of the tenth tergum, this species appears related to *Ochrotrichia glabra*.



Figs. 17–19. *Ochrotrichia eyipantla*, male genitalia. 17, Right side. 18, Left side. 19, Dorsal.

However, because of the presence of three, stout, darkened, apically-situated, peglike processes on the tenth tergum and two long filaments on the apical portion of the phallus, *Ochrotrichia hondurenia* is easily distinguished.

Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth segment deeply depressed and produced anteriorly. Tenth tergum a broad, elongate plate, with three stout, darkened, apically-situated, peglike processes; with left and right side sclerotized, but membranous centrally. Inferior appendages elongate, apex rounded; with a row of black peglike setae around apex and along ventral margin. Phallus tubular with a conically expanded base; apex with two processes, one straight and another gradually decurved.

Material.—Holotype, ♂: BELIZE: Cayo District, Mountain Pine Ridge, 27 June 1971, G. Stacell (NMNH).

Etymology.—Named for the former British Honduras, the country where the holotype was collected.

*Ochrotrichia corneolus* Bueno and Santiago, new species  
(Figs. 24–25)

On the basis of the elongate shape of the inferior appendages and the presence of one short, strong, basodorsal spine, on the tenth tergum, this species is related to *Ochrotrichia stylata* (Ross). However, *O. corneolus* can be separated from that species by the shape of the curved, basodorsal spine on the tenth tergum.

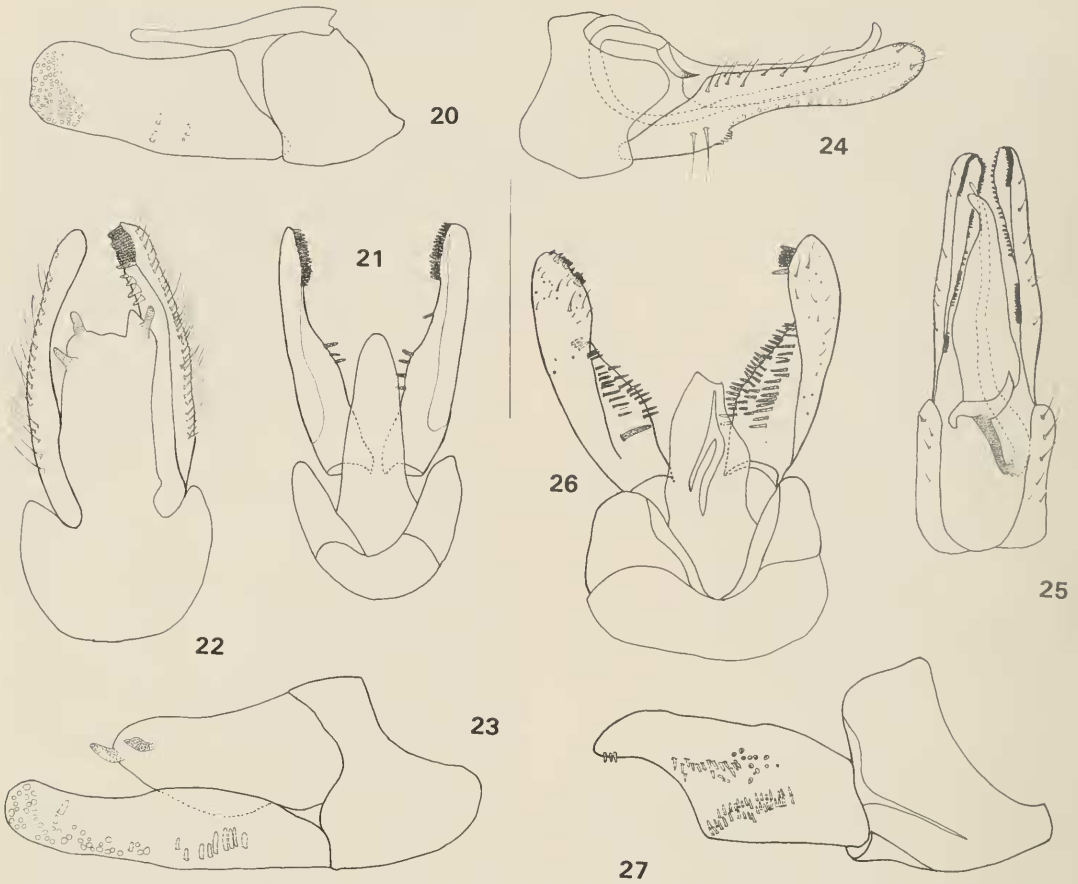
Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth tergum with rounded posterodorsal lobe in lateral aspect, deeply depressed and slightly produced anteriorly. Tenth tergum a narrow, elongate plate with apex upturned; dorsally with a short, single, sinuate, basal spine; underneath plate on left side arises a long spinelike process with its apex a little longer than plate. Inferior appendages elongate, narrow, apex rounded with a row of black, peglike setae apically, along the ventral margin and midbasal ridge. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA: Barro Colorado Island, Snyder-Molino Trail, Marker 3, Trap Level III, 18–24 November 1987, H. Wolda (USNM). Paratypes: same as holotype, 1 ♂ (NMNH); same but 3–9 June 1987, 1 ♂ (NMNH); same but 25 November–1 December 1987, 1 ♂ (NMNH); same but 2–8 December 1987, 1 ♂ (NMNH); same but 19–25 October 1988, 1 ♂ (NMNH); same but 10–16 May 1989, 1 ♂ (NMNH); same but 21–27 June 1989 1 ♂ (NMNH); same but 13 September 1989, 1 ♂ (NMNH); same but 22–28 November 1989, 1 ♂ (NMNH); same but 29 November–5 December 1989, 1 ♂ (NMNH); same but 6–12 December 1989, 1 ♂ (IBUNAM).

Etymology.—*corneolus*: Latin for a diminutive horn.

*Ochrotrichia anomala* Bueno and Santiago, new species  
(Figs. 26–27)

On the basis of the shape of the inferior appendages and tenth tergum, this species



Figs. 20–27. 20–21, *Ochrotrichia glabra*, male genitalia. 20, Right side. 21, Dorsal. 22–23, *O. hondurensis*, male genitalia. 22, Dorsal. 23, Lateral. 24–25, *O. corneolus*, male genitalia. 24, Left side. 25, Dorsal. 26–27, *O. anomala*, male genitalia. 26, Dorsal. 27, Right side.

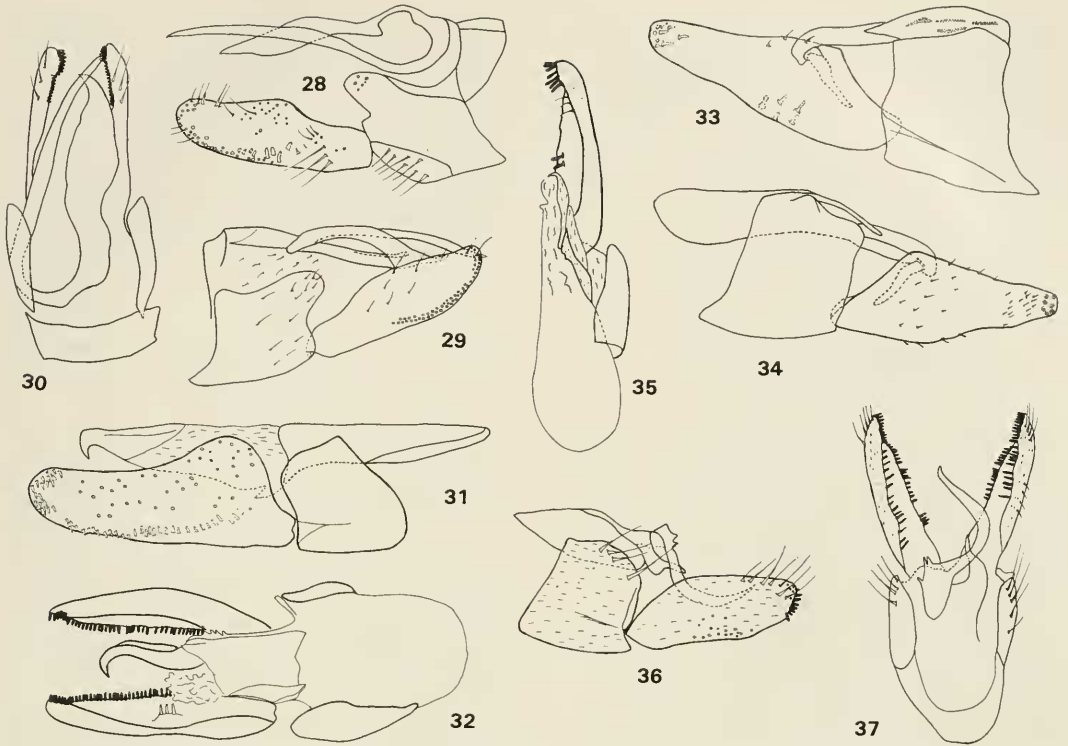
may be related to *Ochrotrichia flagellata* Flint, from which it can be separated by the presence of sclerotized bars on the tenth tergum, and by the lightly rectangular shape of the ninth segment in lateral aspect.

Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth segment deeply depressed and slightly produced anteriorly, in lateral aspect appearing triangular. Tenth tergum a membranous hood, dorsally with a pair of sclerotized, sinuous bars. Inferior appendages long, slender, apex rounded with a mesal cluster of black peglike setae; a high dorsal lobe, with a row of black peglike setae at margin of apex. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA: Barro Colorado Island, Snyder-Molino Trail, Marker 3, trap level III, 18–24 November 1987, H. Wolda (NMNH). Paratypes: same as holotype but 7–13 October 1987, 1 ♂ (NMNH); same but 18–25 October 1988, 1 ♂ (NMNH); same but 16–22 November 1988, 1 ♂ (NMNH); same but 23–29 November 1988, 1 ♂ (NMNH); same but 8–14 February 1989, 1 ♂ (NMNH); same but 11–17 October 1989, 1 ♂ (NMNH); same but 7–13 November 1990, 1 ♂ (NMNH); same but 19–25 December 1990, 1 ♂ (IBUNAM).

Etymology.—*anomala*: means abnormal in Spanish.





Figs. 28–37. 28–30, *Ochrotrichia bicaudata*, male genitalia. 28, Right side. 29, Left side. 30, Dorsal. 31–32, *O. regina*, male genitalia. 31, Right side. 32, Dorsal. 33–35, *O. lupita*, male genitalia. 33, Right side. 34, Left side. 35, Dorsal. 36–37, *O. maya*. 36, Left side. 37, Dorsal.

***Ochrotrichia bicaudata* Bueno and Santiago, new species**

(Figs. 28–30)

On the basis of the shape of the inferior appendages and the tenth tergum, this species appears similar to *Ochrotrichia aldama* (Mosely). However, *O. bicaudata* is recognized by the presence of two, long, slender processes on the tenth tergum.

Adult.—Length of forewing 2 mm. Color in alcohol pale brown. Male genitalia: ninth tergum deeply depressed and produced anteriorly in lateral aspect, with rounded posterodorsal lobes. Tenth tergum with two, long, slender processes, one appears sinuous and wider with apex curving to right; on right side a slightly-curved, long process, with apex directed ventrad. Inferior appendages elongate, with rounded apex; apex, ventral margin and midbasal ridge

with many, short, black, peglike setae. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA: Barro Colorado Island, Snyder-Molino Trail, Marker 3, trap level III, 2–8 December 1987, H. Wolda (NMNH). Paratypes: Same as holotype, 1 ♂ (NMNH); same but 11–17 March 1987, 1 ♂ (NMNH); same but 7–13 October 1987, 1 ♂ (NMNH); same but 4–10 November 1987, 1 ♂ (NMNH); same but 18–24 November 1987, 3 ♂ (NMNH); same but 16–22 November 1988, 1 ♂ (NMNH); same but 30 November–6 December 1988, 1 ♂ (NMNH); same but 7–13 December 1988, 2 ♂ (NMNH); same but 4–10 January 1989, 1 ♂ (NMNH); same but 11–17 January 1989, 1 ♂ (NMNH); same but 1–7 February 1989, 1 ♂ (NMNH); same but 6–12 December 1989, 1 ♂ (NMNH); same but 13–19 De-

ember 1989, 1 ♂ (NMNH); same but 8–14 August 1990, 1 ♂ (NMNH); same but 22–28 August 1990, 1 ♂ (NMNH); same but 12–18 September 1990, 1 ♂ (NMNH); same but 17–23 October 1990, 1 ♂ (NMNH); same but 16–22 January 1991, 1 ♂ (IBUNAM).

**Etymology.**—*bicaudata*: Latin, for the two processes of the tenth tergum.

***Ochrotrichia regina* Bueno and Santiago, new species**

(Figs. 31–32)

Because of the membranous and elongate aspect of the tenth tergum, this species appears related to *Ochrotrichia lupita*. However, the presence of one, curved, spinelike process apically on the tenth tergum easily distinguishes *Ochrotrichia regina*.

**Adult.**—Length of forewing 2 mm. Color in alcohol dark brown. Male genitalia: ninth tergum deeply depressed and produced anteriorly; in lateral aspect appearing almost quadrangular. Tenth tergum with short, basal, middorsal plate; apical process with tip pointed and curved to right; in lateral aspect with apex of apical process turned ventrally and slightly enlarged preapically. Inferior appendages in lateral view elongate, apex rounded; apex, ventral margin and midbasal ridge with with a band of black peglike setae. Phallus long and threadlike.

**Material.**—Holotype, ♂: PANAMA: Barro Colorado Island, Snyder Molino trail, Marker 3, Trap level-I, 30 November–6 December 1988, H. Wolda (NMNH). Paratypes: Same as holotype, but 27 May–2 June 1987, 1 ♂ (NMNH); same but 5–11 August 1987, 1 ♂ (NMNH); same but 26 August–1 September 1987, 1 ♂ (NMNH); same but 16–22 September 1987, 1 ♂ (NMNH); same but 30 September–6 October 1987, 1 ♂ (NMNH) 1 ♂ (IBUNAM); same but 21–27 October 1987, 1 ♂ (NMNH); same but 4–10 November 1987 1 ♂ (NMNH); same but 18–24 November 1987, 1 ♂ (NMNH); same but 25 November–1 December 1987, 1 ♂ (NMNH); same but 2–8 December 1987, 1 ♂ (NMNH);

same but 18–24 May 1988, 1 ♂ (NMNH); same but 9–15 November 1988, 2 ♂ (NMNH); same but 23–29 November 1988, 1 ♂ (NMNH); same but 26 April–2 May 1989, 1 ♂ (NMNH); same but 24–30 May 1989, 1 ♂ (NMNH); same but 30 August–5 September 1989, 2 ♂ (NMNH); same but 6–12 September 1989, 3 ♂ (NMNH); same but 22–28 November 1989, 2 ♂ (NMNH); same but 9–15 May 1990, 1 ♂ (NMNH); same but 13–19 June 1990, 1 ♂ (NMNH); same but 20–26 June 1990, 1 ♂ (NMNH); same but 27 June–3 July 1990, 1 ♂ (NMNH); same but 18–24 July 1990, 1 ♂ (NMNH); same but 8–14 August 1990, 1 ♂ (NMNH); same but 15–21 August 1990, 1 ♂ (NMNH); same but 22–28 August 1990, 1 ♂ (NMNH); same but 29 August–4 September 1990, 2 ♂ (NMNH); same but 12–18 September 1990, 1 ♂ (NMNH); same but 19–25 September 1990, 1 ♂ (NMNH); same but 26 September–2 October 1990, 1 ♂ (NMNH); same but 17–23 October 1990, 2 ♂ (NMNH); same but 31 October–6 November 1990, 1 ♂ (NMNH); same but 14–20 November 1990, 2 ♂ (NMNH); same but 21–27 November 1990, 2 ♂ (IBUNAM).

**Etymology.**—*regina*: Latin for queen.

***Ochrotrichia lupita* Bueno and Santiago, new species**  
(Figs. 33–35)

On the basis of the hook-shaped apex of the tenth tergum, this species is related to *Ochrotrichia regina*. However, *O. lupita* is easily distinguished by the lack of a broad, middorsal area on the tenth tergum.

**Adult.**—Length of forewing 3 mm. Color in alcohol dark brown. Male genitalia: ninth segment deeply depressed and produced anteriorly. Tenth tergum with a short, basodorsal plate with a long, apical process whose apex curves ventrad; left side in lateral view with an elongate, spinelike process and underneath this a long, slightly sinuous, spinelike structure ventrally directed. Inferior appendages elongate, broad, apex rounded, with a cluster of black, peglike se-

tae at apex and another group near ventral margin. Phallus long and threadlike.

Material.—Holotype, ♂: PANAMA: Chiriqui, Guadalupe Arriba, 8°52'26"N: 82°33'13"W, 3–9 July 1985, H. Wolda (NMNH). Paratype: same as holotype but 1–7 May 1985, H. Wolda. 1 ♂ (NMNH).

Etymology.—*lupita*: nickname in Spanish for Guadalupe.

***Ochrotrichia maya* Bueno and Santiago,  
new species  
(Figs. 36–37)**

Because the presence of two asymmetrical precesses on the tenth tergum, *Ochrotrichia maya* is not obviously related to any other species of this genus.

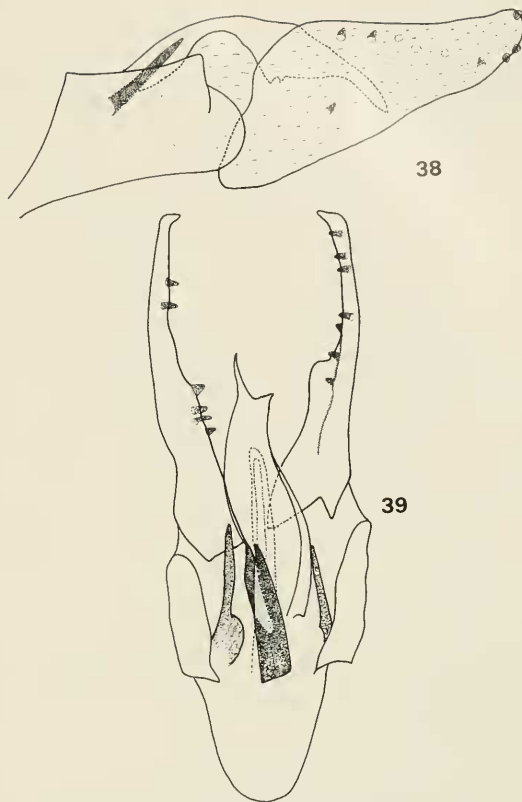
Adult.—Length of forewing, 2 mm. Color stramineous in alcohol. Male genitalia: ninth tergum depressed and produced anteriorly. Tenth tergum divided into long and short processes; long process in left lateral view clearly curved with tip directed ventrally; in dorsal view with basal portion shieldlike, with three, short teeth on right; short process wider, with tip directed ventrad. Inferior appendages elongate, broad; with a band of black, peglike setae at apex and a group of peglike setae mesad. Phallus long and threadlike.

Material.—Holotype, ♂: MEXICO: Chiapas, Cascada de Misolja, 20 km. S. from Palenque, 17–18 May 1981, C. M. & O. S. Flint Jr. (NMNH). Paratype: Route 195, 1.5 mi. N. Ixhuatán, 23 December 1983. S. Hamilton, R. Holzenthal, M. Kovach, 1 ♂ (NMNH).

Etymology.—*maya*: Indian people living in the area where the type was collected.

***Ochrotrichia palmata* Bueno and  
Santiago, new species  
(Figs. 38–39)**

Because of the presence of short, stout, spines at the base of the tenth tergum, *Ochrotrichia palmata* may be related to *Ochrotrichia poblana* and *O. velascoi*. However, *O. palmata* can be recognized by the

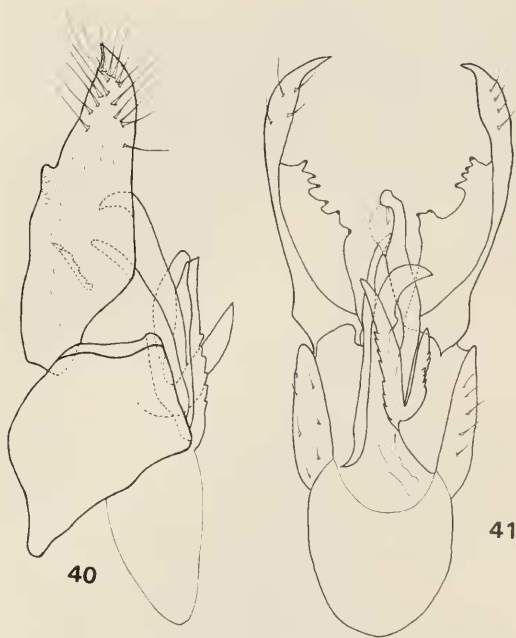


Figs. 38–39. *Ochrotrichia palmata*, male genitalia. 38, Left side. 39, Dorsal.

shape of the tenth tergum which appears palmate in lateral aspect.

Adult.—Length of forewing, 2.5 mm. Color dark brown in alcohol. Forewing with a transverse white band at midlength. Male genitalia: ninth segment open dorsally, produced anteriorly; posterior margin sinuate. Tenth tergum in lateral aspect basally narrow, with curved midsection, apical process palmate, with a fingerlike, ventrally-curved process, and one, short, basal spine; in dorsal aspect, with sinuous, membranous process, surrounded by four short spines, centralmost black-tipped and covered by membranous, dorsal process. Inferior appendages, narrow, with rounded apex; apex of midbasal ridge with a line of black, peglike setae. Phallus long and threadlike.

Material.—Holotype, ♂: MEXICO: Es-



Figs. 40–41. *Ochrotrichia serrana*, male genitalia. 40, Right side. 41, Dorsal.

tado de Mexico, Temascaltepec, 8 February 1979, J. Bueno and J. Padilla (IBUNAM).

**Etymology.**—*palmata*: Latin for hand-shape, shown in the lateral aspect of the tenth tergum.

***Ochrotrichia serrana* Bueno and Santiago, new species**  
(Figs. 40–41)

On the basis of the shape and distribution of the processes of the tenth tergum, this species is similar to *Ochrotrichia chiapa* Denning. However, *Ochrotrichia serrana* differs from that species by the possession of a stout spine with denticuli on the dorsal margin and by the presence of a short, spinelike process on the left side of the base of tenth tergum.

**Adult.**—Length of forewing 2.5 mm. Color pale brown in alcohol. Male genitalia: ninth segment deeply depressed and produced anteriorly. Tenth tergum in dorsal aspect with a basodorsal, stout process with dorsal edge serrate; two lateral spines on right side, dorsalmost wider and curved to

left, ventralmost long and slender, ending with darkened apex; left side with a short, basolateral spine with dorsal margin serrate; long midventral process widened at mid-length with tip rounded and curved to right. Inferior appendages in dorsal view with ventral margin bearing a line of peglike setae; in lateral view long and slender, apex acute. Phallus long and threadlike.

**Material.**—Holotype, ♂. MEXICO: Guerrero, Acahuizotla, 10 km E. of Chilpancingo, 10 November 1982, J. Bueno, E. Barrera and H. Brailovsky (IBUNAM).

**Etymology.**—*serrana*: Spanish name, given to women inhabitants of the mountains.

***Ochrotrichia poblana* Bueno and Santiago, new species**  
(Figs. 42–43)

On the basis of elongate inferior appendages, tapering to a pointed apex in lateral view, this species is related to the *lometa* group, especially with *Ochrotrichia oregona* Ross or *O. nacora* Denning and Blickle. However, *O. poblana* can be separated from these species, by the presence of stout, spinelike processes on both inferior appendages and, in lateral view, by the presence on the tenth tergum of one, dorsally curved, spinelike process on the left side, with two apices, one directed posteriorly and one directed anteriorly.

**Adult.**—Length of forewing 3 mm. Color in alcohol dark brown. Male genitalia: ninth segment incomplete dorsally, produced anteriorly, with posterior border slightly sinuous in lateral aspect. Tenth tergum in dorsal aspect with a short, basodorsal spine arising from left side, curved apically; on right side with one, black, basodorsal spine barely passing left spine; a stout, dark-tipped process, attached in middle, with basal end curved upward and directed anteriorly and distal end ventrally curved and directed posteriorly. Left inferior appendage in dorsal aspect with a well developed midbasal, stout, black-tipped spine; right appendage with a short, basoventral spine and a midventral line of teeth; in lateral aspect a mid-



ventral, stout, dark-tipped spine; apex ending in a short, black, stout process. Phallus long and threadlike.

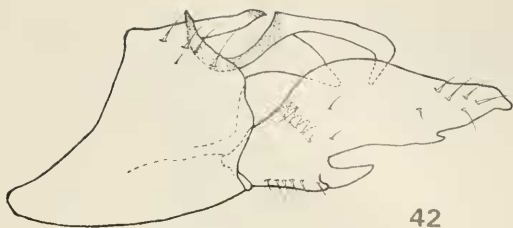
Material.—Holotype, ♂: MEXICO: Puebla, km 30, route Zacapoaxtla-Zacatlán, May 2 1987, J. Bueno, E. Barrera (IBUNAM). Paratypes: same data, 1 ♂ (USNM) and 1 ♂ (IBUNAM); Route Cuetzalan-Zacatlán, km 64, elevation 1,250 m, March 19 1987, J. Bueno, E. Barrera and H. Brailovsky 26 ♂ (IBUNAM).

Etymology.—*poblana*: A name given to the women born in Puebla, Mexico.

***Ochrotrichia (O.) velascoi* Bueno and Santiago, new species**  
(Figs. 44–45)

Because of the wide basal portion and narrow, elongate apical portion of the inferior appendages in lateral view, this species appears to be related to the Californian *Ochrotrichia buccata* Denning and Blickle. However, the shape and distribution of the spinelike processes of the tenth tergum will distinguish *Ochrotrichia velascoi* from *O. buccata* and others.

Adult.—Length of forewing, 2.5 mm. Color dark brown in alcohol. Male genitalia: ninth segment open dorsally and produced anteriorly. Tenth tergum in dorsal aspect, with a short, middorsal, curved spine barely projecting beyond apex of a larger, dark-tipped spine; on right side with long, dark-tipped spinelike process; apical process wide, membranous, slightly sinuous and rounded at apex, arising from apex of shortest, middorsal, dark-tipped spine; in lateral aspect on right longest process appears wide basally and slightly curved ventrad, dorsalmost, dark-tipped spine shows only dark tip; apical process membranous, longer than other processes, and clearly curved ventrad. Inferior appendages in lateral aspect elongate, tapering to a pointed apex; three or more peglike seta near apex; in dorsal aspect, mesal face of left inferior appendage with a short, dark-tipped spine near base; apex of both appendages with



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Figs. 42–43. *Ochrotrichia poblana*, male genitalia. 42, Left side. 43, Dorsal.

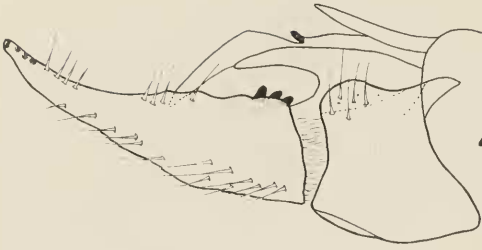
three or more peglike setae. Phallus long and threadlike.

Material.—Holotype ♂: MEXICO: Guerrero, route 134, 102 km N. W. of Zihuatanejo, 1200 m, 7 June 1984, J. Bueno and E. Marino (IBUNAM). Paratype, same as holotype, 1 ♂ (USNM).

Etymology.—We dedicate this species to our student, Biol. Hector Velasco Madrigal.

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We are indebted to Dr. Oliver S. Flint Jr., Emeritus Curator of Neuropteroids of the Department of Entomology, National Museum of Natural History, Smithsonian In-



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Figs. 44–45. *Ochrotrichia velascoi*, male genitalia. 44, Right side. 45, Dorsal.

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